Nov. 18, 1924. 1,516,412

R. E. L. SNEAD

LIVE STOCK WARNING DEVICE

Filed Sept. 27, 1922 2 Sheets-Sheet 1

Fig. 1.

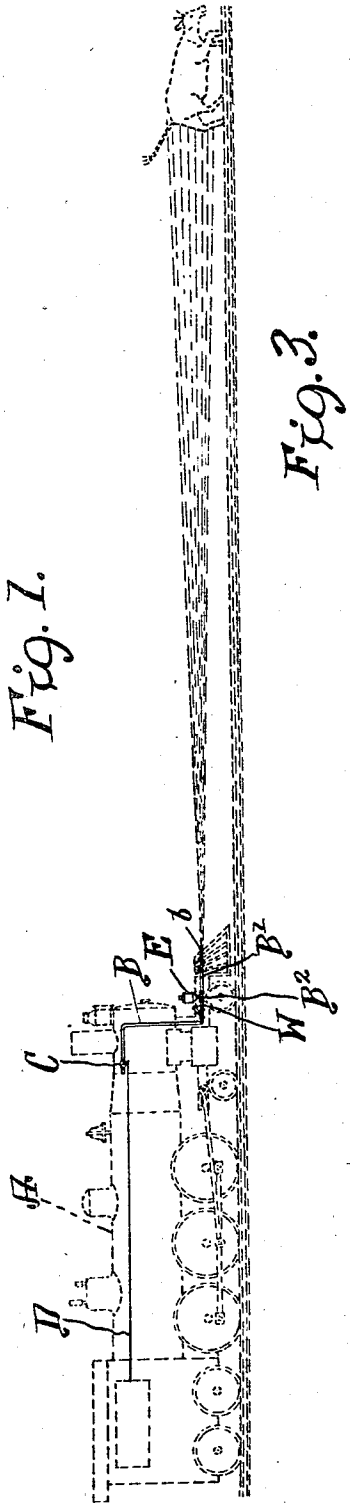

Fig. 3.

Fig. 2.

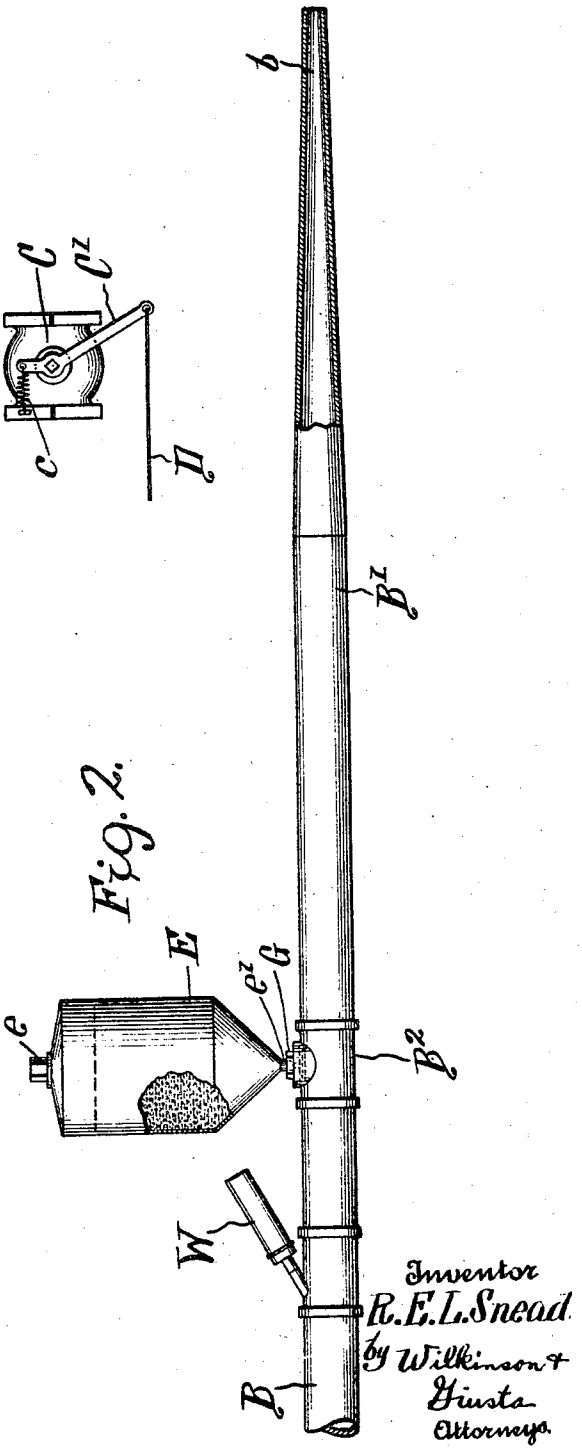

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Fig. 4.

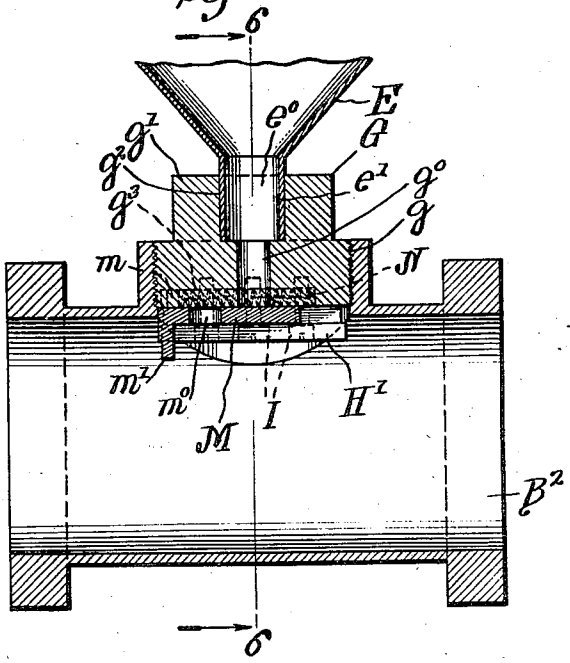


Fig. 6.

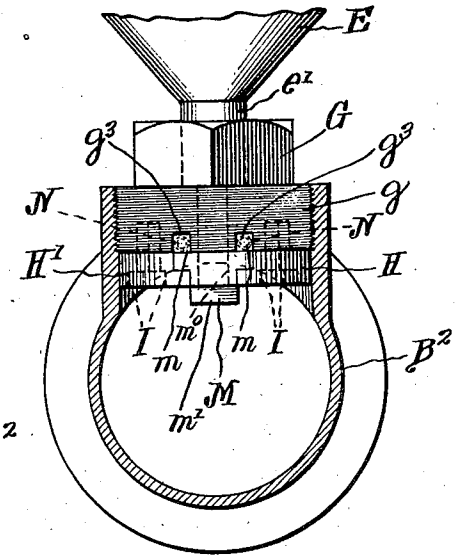


Fig. 5.

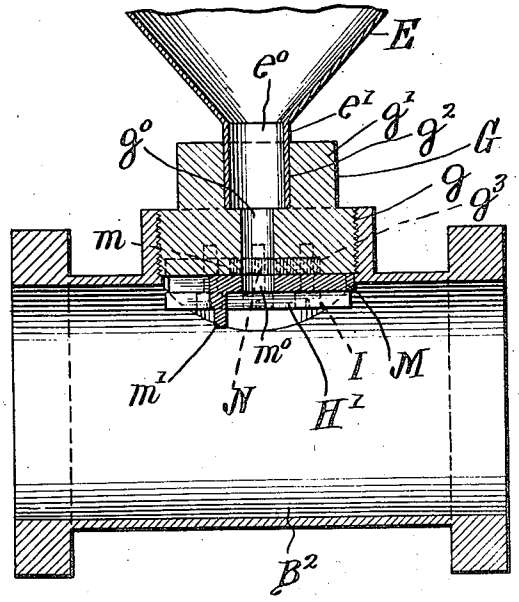


Fig. 7.

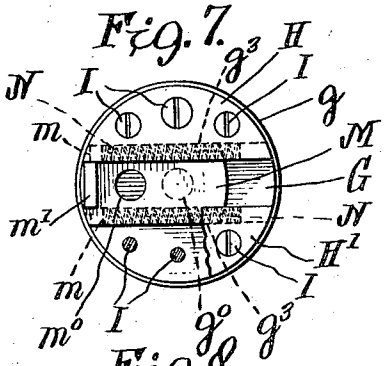


Fig. 8.

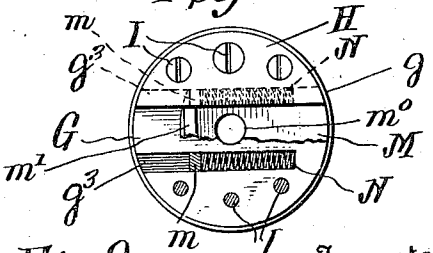
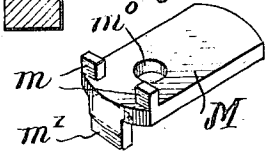


Fig. 9.



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Patented Nov. 18, 1924. 1,516,412

UNITED STATES PATENT OFFICE.

ROBERT EDWARD LEE SNEAD, OF LAFAYETTE, LOUISIANA.

LIVE-STOCK-WARNING DEVICE.

Application filed September 27, 1922. Serial No. 590,831.

To all whom it may concern:

Be it known that I, ROBERT E. L. SNEAD, a citizen of the United States, residing at Lafayette, in the parish of Lafayette and State of Louisiana, have invented certain new and useful Improvements in Live-Stock-Warning Devices, of which the following is a specification.

My invention relates to attachments for locomotives whereby the pressure of the steam or compressed air may be made use of to warn cattle or other stock straying upon the railroad tracks, by an audible signal and by the actual impact of a projectile, of the approaching danger. It is intended especially to frighten cattle, horses or other animals from off the tracks as the train approaches.

The invention will be more clearly understood after reference to the accompanying drawings, in which like parts are indicated by similar reference symbols throughout the several views, and in which:—

Figure 1 is a diagrammatic view showing a locomotive in dotted lines fitted with my improved attachment, the said attachment being shown in full lines.

Figure 2 is a view, on a larger scale, of the pneumatic gun and whistle with the magazine for supplying ammunition to the gun.

Figure 3 is a detail showing the valve for admitting steam from the boiler of the locomotive.

Figure 4 is a section through the breech portion of the pneumatic gun, parts being shown on a larger scale, and parts being broken away; the valve for controlling the supply of projectiles being shown in the normal or closed position.

Figure 5 is a similar view to Fig. 4, but shows the valve for supplying projectiles in the open position.

Figure 6 shows a section along the line 6—6 of Fig. 4, parts being shown in elevation.

Figure 7 is an inverted plan view of the automatic valve for controlling the supply of projectiles and the contiguous parts, the valve being shown in the closed position, and parts being broken away.

Figure 8 is a similar view to Fig. 7, but with the valve for controlling the projectiles in the open position, parts being also shown as broken away; and

Figure 9 is a detail perspective view showing the valve controlling the projectiles as detached from the apparatus.

A represents the locomotive which is supplied with a steam pipe B, connected to the steam space of the boiler in any convenient way, as by the valve arrangement C which may be opened by the valve lever C′ and normally closed by the spring *c*.

D represents a wire or cord which leads from the valve lever C′ to the cabin of the engine, for convenience of controlling the valve C.

It will be obvious that other modes of opening the valve may be adopted, and the foregoing is merely illustrative of a convenient arrangement which may be used in connection with my invention.

Towards its forward end the steam pipe B terminates in a pneumatic gun B′, which is preferably provided with a tapered or "choke" muzzle *b*. This gun is normally pointed parallel with the tracks. The gun B′ is connected to the steam pipe B by means of a breech housing B^2 in which the plug G is screwed, as at *g*, which plug is provided with a squared head *g′* for convenience of screwing the same in place; and is also provided with a central perforation g^0 and with a socket g^2 adapted to receive the reduced end *e′* of the container or magazine E in which the projectiles are placed. This magazine is preferably closed at its upper end by a plug *e*.

In the magazine I place suitable projectiles, such as buckshot, which may be either loose or mounted in lubricating oil.

On the lower face of the plug G I secure guide plates H and H′ as by means of the screw bolts I which serve as guides for the feed valve M controlling the feed of projectiles to the gun. This valve is provided with upwardly projecting lugs *m*, which project in the guide slots g^3 in the bottom of the plug and engage the ends of the return springs N, which springs tend to throw the feed valve to the closed position, as shown in Fig. 4. The valve is also provided with an opening m^0, and with a downwardly projecting lug *m′* which projects into the housing B^2.

When steam pressure is applied to the pipe B, the rushing steam will move the feed valve M from the closed to the open position against the action of said springs and will keep the valve in the open position

as long as steam pressure is on. The steam pipe may be also provided in any convenient place with a whistle or howler W which will give an audible signal.

The operation of the device is as follows:—

When the engineer sees an animal on the track, he opens the valve C and allows the steam to rush from the boiler through the pipe B, sounding the howler and opening the feed valve M. When the feed valve is open the buckshot will drop from the magazine through the openings e^6 and g^6, and will be carried along by the steam through the gun B′ and out through the muzzle b thereof. These buckshot, being impelled with considerable velocity, will strike the animal and sting the same, and the animal will be frightened from the track, if it has not already paid attention to the sound signal.

Any suitable type of whistle or howler may be used if desired, or the audible signal may be omitted if desired; but I prefer to use both the gun and the audible signal.

I prefer to use the steam from the boiler as this is always available while the train is running; but if desired the gun may be operated by compressed air, which is generally available on trains, and may be used at a higher pressure if desired than the steam pressure.

The operation of the device will be precisely the same whether steam or air is admitted to the pipe B and to the howler and pneumatic gun.

The automatic closing of the feed valve M, under the action of the springs N, will prevent the wasting of the projectiles from the magazine after the pressure has been turned off.

By immersing the projectiles in the magazine in lubricating oil, they are more readily fed to the gun, and pass from the gun with less friction, and incidentally higher velocity.

It will be obvious that various changes might be made in the herein described construction, and in the combination and arrangement of parts which could be used without departing from the spirit of my invention; and I do not mean to limit the invention to such details except as particularly pointed out in the claims.

Having thus described my invention what I claim and desire to secure by Letters Patent of the United States is:—

1. An attachment for locomotives comprising a pipe in connection with the steam supply of the locomotive, a perforated plug fitted into said pipe and having guide ways upon the inner face thereof, a slide valve movably mounted in said guide ways and having a perforation adapted to register with the perforation in said plug, said slide valve having a portion extending down and into the steam pipe whereby to encounter the steam for shifting the valve to bring about registry between the ports, means for yieldably shifting the valve to effect non-alinement of the ports, and a receptacle for holding projectiles in communication with the perforation of said plug.

2. An attachment for locomotives comprising a steam pipe in connection with the locomotive, a nozzle, a connection between said steam pipe and nozzle, a plug removably secured in said connection and having a perforation therein, guide plates carried by the inner face of said plug, a slide valve movably mounted in said guide plates and having a perforation adapted to register with the perforation in said plug, said valve having lugs thereon, said plug having channels to slidably receive the lug, coil springs in said channels bearing against the lugs for shifting the valve to a closed position, said valve having a portion projecting into the connection and in the path of the steam whereby the steam may open the valve, and a receptacle for projectiles carried by said plug and in communication with the perforation therein.

3. A locomotive attachment comprising a steam pipe connected to the locomotive, a valve in the steam pipe for controlling the passage of steam, a nozzle, a connection coupling said nozzle to the steam pipe, said connection having an opening in its upper wall, a plug removably screwed into said opening and having a perforation therein, a receptacle for holding buck shot mounted in said plug and communicating with the perforation, said plug having channels extending into its inner face, guide plates lapping over said channels, a plate valve slidable within said guide plates and having lugs extending into said channels and coil springs in the channels bearing against said lugs, said plate valve having a perforation adapted to register with the perforation in the plug, said plate valve having a part projecting inwardly into the connection and in the path of the steam.

ROBERT EDWARD LEE SNEAD.